

REMARKS

In this paper, claims 1 and 13 are currently amended, and claims 15-18 are added. After entry of the above amendment, claims 1 and 3-18 are pending, and claim 2 has been canceled.

Initially, in view of the amendments made to date, the applicant hereby disclaims all prior statements made in prior attempts to distinguish over the prior art, and the examiner should consider the prior art anew based on the existing claim language without reliance on any prior statements made by the undersigned.

Claims 1 and 3-12 were rejected under 35 U.S.C. §112 as being indefinite. This basis for rejection is respectfully traversed.

Claim 1 does not recite a radially inwardly *facing* spline. Claim 1 recites a spline *extending* radially inwardly from the sprocket body. The “radially outer surface” recited in claim 1 is simply a surface of the radially inwardly extending spline that faces radially outwardly.

Claims 1, 3-11 and 13 were rejected under 35 U.S.C. §102(b) as being anticipated by Militana (US 3,168,836). This basis for rejection is respectfully traversed.

Militana discloses a sprocket (20) comprising a core (22) and a wear rim (24). Core (22) includes a hub (26) with an opening (28) that fits on the end of a vehicle drive shaft. A plurality of spider arms (30) extend radially outwardly from hub (26), and a hoop (32) is disposed on the ends of spider arms (30). Wear rim (24) has an inner periphery (33) that is dimensioned to fit on the outer periphery of hoop (32) with a sliding fit so that wear rim (24) may be removed and replaced easily from core (22).

The dispute appears to center around the interpretation of the word “spline.” For claim 1, the examiner takes the position that Militana’s spline extends from the outer peripheral surface of hub (26) to the inner peripheral surface of the actual splines at (28). For independent claim 13, the examiner takes the position that Militana’s spline includes arms (30) that extend radially outwardly from hub (26).

It is true that claim terms are to be given their broadest reasonable interpretation, but the interpretation must be reasonable and consistent with the interpretation that those skilled in the art would reach. MPEP §2111. In other words, the words of a claim must be given their plain meaning, MPEP §2111.01(I), and “plain meaning” refers to the ordinary and customary meaning given to the term by those of ordinary skill in the art. MPEP §2111.01(II).

According to the *McGraw-Hill Dictionary of Scientific and Technical Terms, Sixth Edition*, a spline is defined as “One of a number of equally spaced keys cut integral with a shaft, or similarly, keyways in a hubbed part; the mated pair permits the transmission of rotation or translatory motion along the axis of the shaft.” The definition is attached to the end of this paper. Of course, consistent with the specification, splines as used herein need not be equally spaced. In any event, a spline is the keyway formed in the hub and does not include the entire hub or arms that extend radially outwardly from the hub. Accordingly, per claim 1, Militana neither discloses nor suggests a spline extending radially inwardly from the sprocket body, wherein the spline includes a radially outer surface facing radially outwardly, and wherein the radially outer surface of the spline faces a radially inner surface of the sprocket body when viewed perpendicular to the rotational axis. As for independent claim 13, Militana neither discloses or suggests a spline extending radially inwardly from the sprocket body, wherein the spline has a root portion and a radially inner portion, wherein the root portion extends radially inwardly of the sprocket body and has a side wall facing in a rotational direction, and wherein the radially inner portion extends radially inwardly of the root portion and has a side wall facing in the rotational direction, wherein a thickness of the radially inner portion of the spline in a direction parallel to the rotational axis is greater than a thickness of the root portion of the spline in a direction of the rotational axis.

The examiner also takes the position that a plurality of pieces form “one-piece” when assembled. Such an interpretation is patently unreasonable. One-piece means one piece, not several pieces removably attached to each other. In any event, the one-piece limitation has been deleted from claims 1 and 13 and placed in new dependent claims 16 and 18.

Finally, as per claim 15, Militana neither discloses nor suggests wherein the spline originates from and extends radially inwardly from an innermost peripheral surface of the sprocket body that

forms a radially outwardly extending spline, wherein the spline terminates in a radially inwardly facing free end, and wherein the radially outer surface of the spline that faces radially outwardly is disposed radially inwardly from the radially outermost portion of the inner peripheral surface that forms the radially outwardly extending spline. As per claim 17, Militana neither discloses nor suggests wherein the spline originates from and extends radially inwardly from an innermost peripheral surface of the sprocket body that forms a radially outwardly extending spline, wherein the spline terminates in a radially inwardly facing free end.

Claims 1, 3-5 and 10 were rejected under 35 U.S.C. §102(b) as being anticipated by Lim, et al (US 2001/0039224). This basis for rejection is respectfully traversed.

Lim, et al discloses a freewheel (15) for a bicycle. Freewheel (15) includes an outer tubular body (17) that supports a plurality of sprockets (21-27). Sprocket (21), for example, includes a splined inner peripheral surface that engages a corresponding splined outer peripheral surface of outer tubular body (17). A plurality of sprocket teeth are disposed circumferentially around the outer peripheral surface of the sprocket body, and a plurality of oval-shaped openings are disposed circumferentially around the middle portion of the sprocket body.

It is unreasonable to interpret the radially outwardly facing surfaces of the plurality of oval openings in the sprocket body to be part of the splines. Accordingly, Lim, et al neither discloses nor suggests the subject matter recited in claims 1, 3-5 and 10.

Claims 12 and 14 were rejected under 35 U.S.C. §103(a) as being unpatentable over Militana. This basis for rejection is respectfully traversed for the same reasons noted above. Furthermore, simply reciting that two side wall portions have the same thickness indicates nothing about what that thickness is, so it cannot be said that any increase in strength and rigidity of the sprocket body would occur. In fact, in the disclosed embodiment, the thicknesses T1w and T2w of the side walls, while equal to each other, is less than the thicknesss of the other portions of the sprocket, so clearly no increase in strength or rigidity occurs from that configuration.

Accordingly, it is believed that the rejections under 35 U.S.C. §102 and §103 have been overcome by the foregoing amendment and/or remarks, and it is submitted that the claims are in

condition for allowance. Reconsideration of this application as amended is respectfully requested.  
Allowance of all claims is earnestly solicited.

Respectfully submitted,

/James A. Deland/

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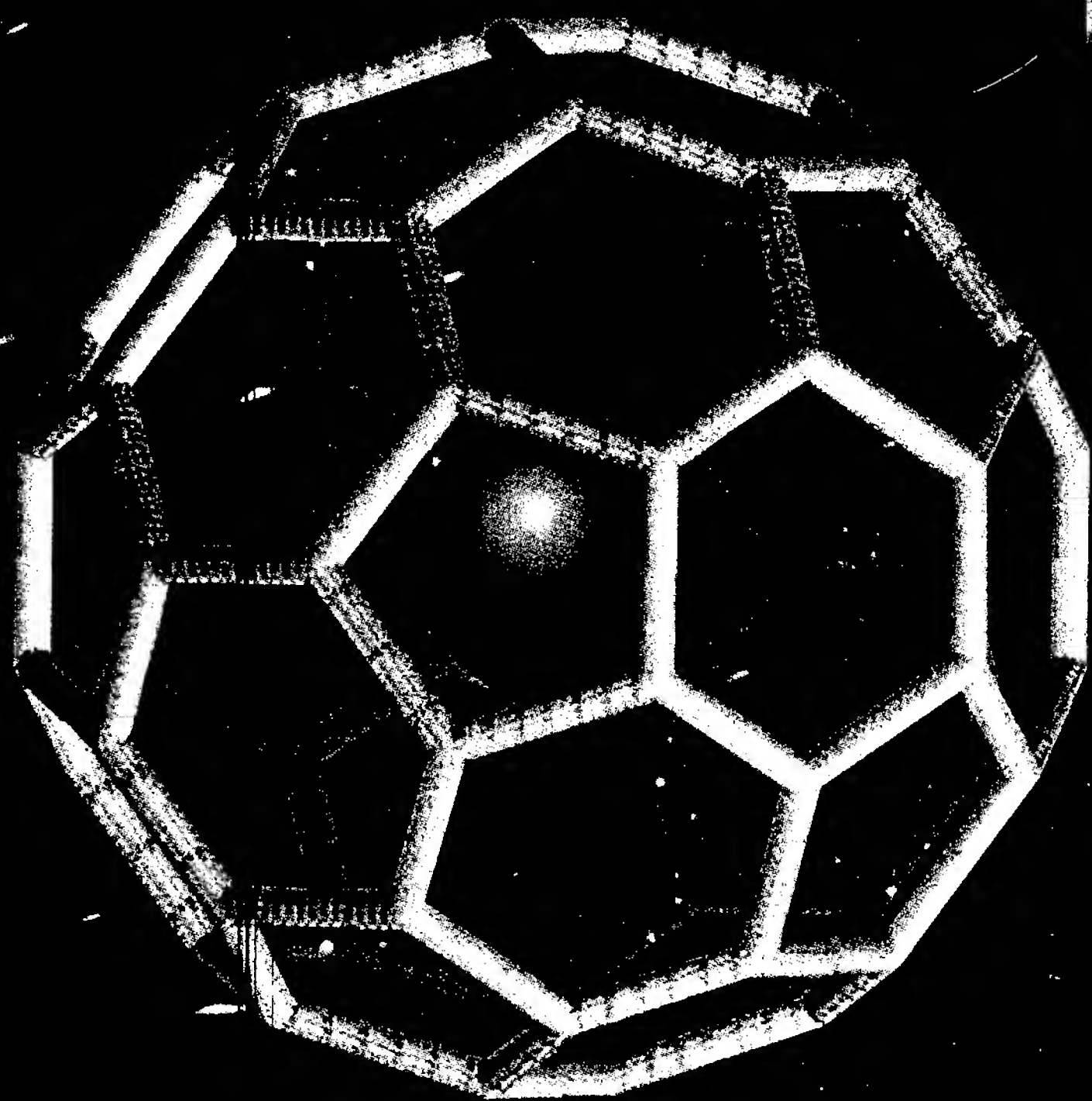
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McGraw-Hill  
Dictionary of

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**SCIENTIFIC  
and  
TECHNICAL  
TERMS**



Sixth Edition

**spitted fuse** [ENG] A slow-burning fuse which has been cut open at the lighting end for ease of ignition. { 'spid·əd 'fyüz }

**spitting rock** [ENG] A rock mass under stress that breaks and ejects small fragments with considerable velocity. { 'spid·iŋ 'ræk }

**SPL** See sound pressure level.

**splanchnic mesoderm** [EMBRYO] The internal layer of the lateral mesoderm that is associated with the endoderm after the formation of the coelom. { 'splanj·nik 'mez·ə,dərm }

**splanchnic nerve** [NEUROSCI] A nerve carrying nerve fibers from the lower thoracic paravertebral ganglions to the collateral ganglions. { 'splanj·nik 'nərv }

**splanchnocranium** [ANAT] Portions of the skull derived from the primitive skeleton of the gill apparatus. { 'splanj·nə'krā·nē·əm }

**splanchnopleure** [EMBRYO] The inner layer of the mesoblast from which part of the wall of the alimentary canal and portions of the visceral organs are derived in coelomates. { 'splanj·nə'plūr }

**splash block** [BUILD] A small masonry block with a concave surface placed on the ground below a downspout at a sloping angle to carry roof drainage water away from a building and to prevent erosion of the soil. { 'splash 'blæk }

**splashdown** [AERO ENG] 1. The landing of a spacecraft or missile on water. 2. The moment of impact of a spacecraft on water. { 'splash,dəʊn }

**splash erosion** [GEOL] Erosion resulting from the impact of falling raindrops. { 'splash i,rōzh·ən }

**splash lubrication** [ENG] An engine-lubrication system in which the connecting-rod bearings dip into troughs of oil, splashing the oil onto the cylinder and piston rods. { 'splash ,lū·brə,kā·shən }

**splatter** [COMMUN] Distortion due to overmodulation of a transmitter by peak signals of short duration, particularly sounds containing high-frequency harmonics; it is a form of adjacent-channel interference. { 'splad·ər }

**splay** [ENG] A slanted or beveled surface making an oblique angle with another surface. { 'splā }

**splayed arch** [CIV ENG] An arch whose opening has a larger radius in front than at the back. { 'splād 'ärch }

**spleen** [ANAT] A blood-forming lymphoid organ of the circulatory system, present in most vertebrates. { 'splēn }

**splenectomy** [MED] Surgical removal of the spleen. { 'splə'nek'tə·mē }

**splenic fever** See anthrax. { 'splen·ik 'fē·vər }

**splenic flexure** [ANAT] An abrupt turn of the colon beneath the lower end of the spleen, connecting the descending with the transverse colon. { 'splen·ik 'flek·shər }

**splenium** [ANAT] The rounded posterior extremity of the corpus callosum. [MED] A bandage. { 'splē·nē·əm }

**splenomegaly** [MED] Enlargement of the spleen. { 'splē·nə'meg·ə·lē }

**splint coal** See splint coal. { 'splent 'kōl }

**splice** [ELEC] A joint used to connect two lengths of conductor with good mechanical strength and good conductivity. [ENG] To unite two parts, such as rope or wire, to form a continuous length. [GRAPHICS] To join two pieces of film together. { 'splis }

**spliced** [GEOL] Relating to veins that pinch out and are overlapped at that point by another parallel vein. { 'splist }

**splice plate** [CIV ENG] A plate for joining the web plates or the flanges of girders. { 'splis ,plāt }

**splicing tape** [MATER] A pressure-sensitive nonmagnetic tape used for splicing magnetic tape and motion picture film; it has a hard adhesive that will not ooze and gum up the equipment or cause adjacent layers of tape or film on the reel to stick together. { 'splis·iŋ ,tāp }

**spline** [DES ENG] One of a number of equally spaced keys cut integral with a shaft, or similarly, keyways in a hubbed part; the mated pair permits the transmission of rotation or translatory motion along the axis of the shaft. [ENG] A strip of wood, metal, or plastic. [GRAPHICS] A flexible strip used in drawing curves. [MATH] A function used to approximate a specified function on an interval, consisting of pieces which are defined uniquely on a set of subintervals, usually as polynomials or some other simple form, and which match up with each other and the prescribed function at the end points of the subintervals with a sufficiently high degree of accuracy. { 'splin }

**spline broach** [MECH ENG] A broach for cutting straight-sided splines, or multiple keyways in holes. { 'splin ,brōch }

**splined shaft** [DES ENG] A shaft with longitudinal gearlike ridges along its interior or exterior surface. { 'splind 'shaft }

**splint** [GEOL] See splint coal. [MED] A stiff or flexible material applied to an anatomical part in order to protect it, immobilize it, or restrict its motion. { 'splint }

**splint coal** [GEOL] A hard, dull, blocky, grayish-black, banded bituminous coal characterized by an uneven fracture and a granular texture; burns with intense heat. Also known as splent coal; splint. { 'splint 'kōl }

**split** [COMPUT SCI] To divide a data base, file, or other data set into two or more separate parts. [GEOL] A coal seam that cannot be mined as a single unit because it is separated by a parting of other sedimentary rock. Also known as coal split; split coal. [MIN ENG] 1. To divide the air current into separate circuits to ventilate more than one section of the mine. 2. Any division or branch of the ventilating current. { 'split }

**split-altitude profile** [AERO ENG] Flight profile at two separate altitudes. { 'split 'al·tə,tüd 'prō,fīl }

**split-anode magnetron** [ELECTR] A magnetron in which the cylindrical anode is divided longitudinally into halves, between which extremely high-frequency oscillations are produced. { 'split 'an,əd 'mag·nə,träŋ }

**split barrel** [DES ENG] A core barrel that is split lengthwise so that it can be taken apart and the sample removed. { 'split 'bar·əl }

**split-barrel sampler** [DES ENG] A drive-type soil sampler with a split barrel. { 'split 'bar·əl 'sam·plər }

**split-base concept** [ORD] A principle which applies to a deployed tactical combat unit that divides its resources between two separate operating bases. { 'split 'bās 'kän,sept }

**split bearing** [DES ENG] A shaft bearing composed of two pieces bolted together. { 'split 'ber·iŋ }

**split cameras** [OPTICS] An assembly of two cameras disposed at a fixed overlapping angle relative to each other. { 'split 'kam·rəz }

**split cavity** [ENG] A cavity, such as in a mold, made in sections. { 'split 'kav·əd·ē }

**split coal** See split. { 'split 'kōl }

**split die** [MET] 1. A screw-thread die made in one piece with a longitudinal slit connecting the outside to the central hole which allows size adjustment. 2. See segment die. { 'split 'dī }

**split-field microtron** [NUCLEO] A microtron whose magnetic field is divided into two separate sections in order to provide room for a large accelerating section. { 'split 'fēld 'mī·krə,träŋ }

**split fix** [NAV] A fix by horizontal sextant angles obtained by measuring two angles between four objects, or suitable charted features, with no common center object being observed. { 'split 'fiks }

**split flap** [AERO ENG] A hinged plate forming the rear upper or lower portion of an airfoil; the lower portion may be deflected downward to give increased lift and drag; the upper portion may be raised over a portion of the wing for the purpose of lateral control. { 'split 'flap }

**split gene** [GEN] A eukaryotic gene in which the coding sequence is divided into two or more exons that are interrupted by a number of noncoding intervening sequences (introns). Also known as interrupted gene. { 'split 'jēn }

**split-half method** [STAT] A method used to gage the reliability of a test; two sets of scores are obtained from the same test, one set from odd items and one set from even items, and the scores of the two sets are correlated. { 'split ,haf 'meth·əd }

**split interstitial** [CRYSTAL] A crystal defect in which a displaced atom forms a bond with a normal atom in such a way that neither atom is on the normal site but the two are symmetrically displaced from it. { 'split ,in·tər'stish·əl }

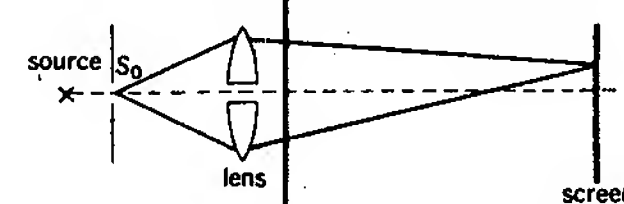
**split-lens interference** [OPTICS] Interference produced by a Billet split lens. { 'split 'lenz ,in·tər'fir·əns }

**split link** [DES ENG] A metal link in the shape of a two-turn helix pressed together. { 'split 'liŋk }

**splitnut** [ENG] A nut cut axially into halves to allow for rapid engagement (closed) or disengagement (open). { 'split'nət }

**split personality** [PSYCH] The condition in which there is a separation of various components of the normal personality

## SPLIT-LENS INTERFERENCE



Billet split-lens interference. Light from source  $S_0$  is transmitted through two separated parts of lens to screen producing interference fringes on screen.